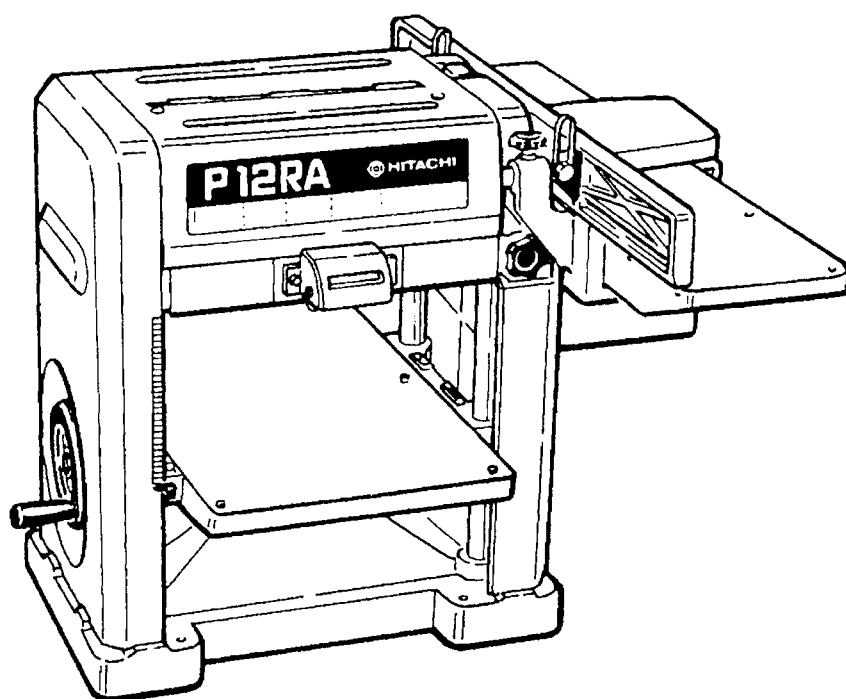




PORTABLE PLANER JOINTER

MODEL 312mm (12 9/32") P12RA

INSTRUCTION MANUAL



Important :

For your own safety, read this INSTRUCTION MANUAL before operating the power tool.

Keep this MANUAL available as an important reference when using the Power Tool.



DOUBLE INSULATION

IMPORTANT INFORMATION

Most accidents of power tool operation and maintenance are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before it occurs.

Read and understand all safety precautions and warnings before operation and maintenance.

Basic safety precautions are outlined in the "SAFETY" section of this manual and in descriptions of operation and maintenance.

Operations that may cause bodily injury or machine damage are identified by CAUTION signs on the machine and in this manual.


Hitachi cannot anticipate every possible circumstance that might involve a potential hazard.

The CAUTIONS in this manual and on the machine are therefore not all inclusive.

If a procedure, tool or work method or operating technique not specifically recommended by Hitachi is used, you must satisfy yourself that it is safe for you and others.

SAFETY

SAFETY RULES FOR POWER TOOLS.

 **WARNING** : When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following.

READ ALL INSTRUCTIONS

1. **KEEP GUARDS IN PLACE** and in working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form a habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
4. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or don't expose them to rain. Keep work area well lighted.
5. **KEEP CHILDREN AWAY.** All visitors should be kept safe distance from work area.
6. **MAKE WORKSHOP KID PROOF** with padlocks, master switches, or by removing starter keys.
7. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
9. **WEAR PROPER APPAREL.** Wear no loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
10. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are **not** safety glasses.
11. **SECURE WORK.** Use clamp or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.
13. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
14. **DISCONNECT TOOLS** before servicing ; when changing accessories such as blades, etc..
15. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.
16. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
17. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.

18. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function-check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard should be properly repaired or replaced.
19. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade only.
20. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.**
Don't leave tool until it comes to a complete stop.
21. When servicing use only identical replacement parts.
22. Apply AC 115 volts only. Applying fluctuated AC 115 volts or applying DC power could cause the POWER TOOL to mis-operate and thus cause serious injury or damage.

Specific Safety Rules for Power Tool

These specific safety rules of "DO's" and "DON'Ts" apply to this POWER TOOL.

DO's

1. Familiarize yourself with the safety rules and practices for this POWER TOOL.
2. Check that the POWER TOOL is always clean.
3. Handle the POWER TOOL carefully. If the POWER TOOL is dropped or struck against any hard objects, it might get deformed, cracked, or otherwise, damaged.
4. Stop the operation at once, if you notice any abnormality.
5. Check that the parts are mounted properly and securely.
6. Shut off power and wait for cutter head to stop before maintenance or adjustments.
7. Always make a trial run first.
8. Check that the safety covers are properly placed.
9. Inspect tool cords periodically.
10. Check that proper extension cords (outdoor use, etc.) are used as needed.
11. Check that the motor air vents are fully open.
12. Start cutting only after the motor revolution reaches full speed.
13. Prior to operating the machine, confirm that the cutter head securing device is securely released. If the Machine is operated with the cutter head in a locked state, a burnt motor or a damaged locking device and belt may result.
14. Confirm that no nails, screws, or other foreign matter exist on a workpiece to be machined. The above-mentioned item, if left unheeded, may cause damage to or abnormal wear of the planer blades.
15. Support the work piece adequately at all times during operation; maintain control of the work at all times.
16. Equally grind each pair (two pieces) of planer blades. Unequally ground pairs of planer blades may cause unbalanced operation, resulting in excessive vibration and reduced service life of the Machine caused by their unbalanced weight. When replacing the planer blades always replace them in pairs.
17. Always replace a pair of blade holder (for planer and jointer).
Blade holder individually replaced may cause unbalanced operation, resulting in reduced service life of the Machine caused by excessive mechanical vibration.
18. Securely tighten the planer blade.
Always securely tighten the planer blades at their specified position.

19. Confirm that the safety cover offers smooth, sliding motion.

The safety cover is used to protect one's body and clothing from careless contact with the planer blade. Prior to operating the Machine, always confirm that the safety cover offers smooth, sliding motion in covering planer blades.

20. Maintain the proper relationships of infeed and outfeed table surfaces and cutter head knife path.
21. Maintain planer blades constantly sharp. Grind the planer blades as frequently as possible. Poor planer blades may cause motor overload operation, reducing the efficiency.

DON'Ts

1. Don't operate the POWER TOOL unless you fully understand its mechanism.
2. Don't leave the POWER TOOL unattended in an unsafe condition.
3. Don't operate the POWER TOOL if you are tired.
4. Don't use the POWER TOOL for applications not specified in the instruction manual.
5. Don't touch moving parts such as blades, bits, and cutters.
6. Don't remove safety devices.
7. Don't abuse the cord.
8. Don't carry plugged-in POWER TOOL with your finger on the switch.
9. Don't use the POWER TOOL if the switch doesn't turn on and off properly.
10. Don't use the POWER TOOL near flammable liquids or gases.
11. Don't clean plastics with solvent.
12. Never place your hands near the chip discharge port during operation. Since the planer jointer employs sharp blade edges in the chip discharge port, to avoid a serious accident never place your hands near the part during operation.
13. Don't back the work toward the infeed table.
14. Don't attempt to perform an abnormal or little-used operation without study and the use of adequate hold-down/push blocks, jigs, fixtures, stops, etc.
15. Never lock the safety cover. To avoid a serious accident, never lock the safety cover during operation.
16. Don't perform jointing operations on material shorter than 8 inches narrower than 3/4 inch, or less than 1/4 inch thick.
17. Don't perform planing operations on material shorter than 6 inches narrower than 3/4 inch, or wider than 12 inches or thinner than 1/2 inch.

WARNING

For Your Own Safety Read This Instruction
Manual Before Operating The Power Tool

1. Wear eye protection.
2. Never perform jointing or planing operation with cutter head or drive guard removed.
3. Never make jointing or planing cut deeper than 1/8 inch.
4. Always use hold-down/push blocks for jointing material narrower than 3 inches, or planing material thinner than 3 inches.
5. Shut off power and wait for cutter head to stop before servicing or adjusting tool.

SAVE THESE INSTRUCTIONS.

MEANINGS OF CAUTION SIGNS

WARNING indicates a potentially hazardous situation which, if ignored, could result in death or serious injury.

CAUTION indicates hazardous situations which, if ignored, could result in minor or moderate injury, or could cause machine damage.

NOTE emphasizes essential information.

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FOREWORD

The information in this manual applies to operation and maintenance of the Power Tool. Some illustrations in this manual show details or attachments that might differ from your POWER TOOL. And guards and covers may have been removed for illustrative purposes.

DOUBLE INSULATION FOR SAFER OPERATION

To ensure safer operation of this electric power tool, HITACHI has adopted a double insulation system. "Double insulation" as used here, means a system of two insulations physically separated and arranged between electrically conductive materials connected to the power supply and to the outer frame handled by the operator. Therefore, the nameplate shows both the "□" mark and "Double insulation", or either one on the power tool.

Although this system has no external grounding, you must still follow the normal safety precautions given in this manual.

To keep the double insulation system effective, follow these precautions :

- * To avoid lessening the double insulation-feature, always get in touch with your dealer or an authorized HITACHI power tool repair shop when assembling, disassembling or replacing parts other than accessories or carbon brushes.
- * Clean the exterior of the tool with a soft cloth moistened in soap water, and dry thoroughly. Don't use chloric solvents, gasoline or thinner on plastic components ; otherwise they might dissolve.

PART NAME

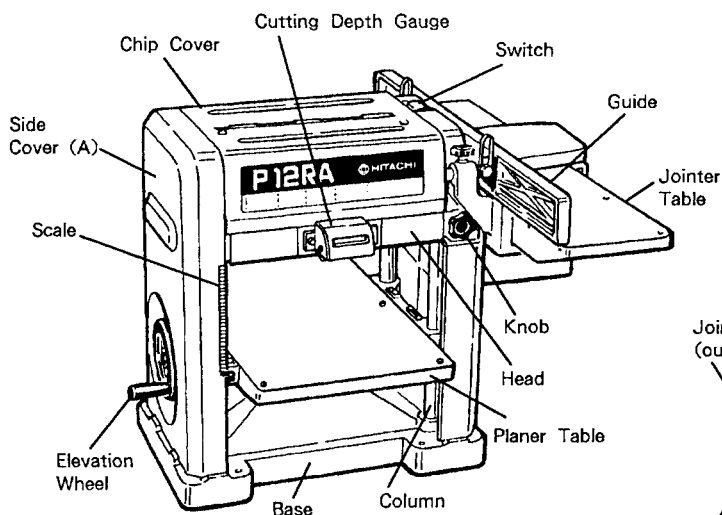


Fig. 1 - a

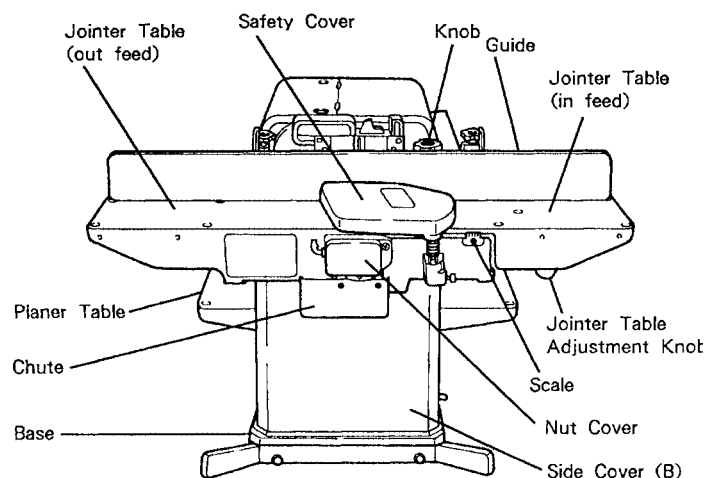



Fig. 1 - b

OPTIONAL ACCESSORIES

- Extension Roller Ass'y (300mm) ... Convenient for supporting material in processing long (Code No. 303862) material by a jointer.
- Extension Roller (A) Ass'y (150mm) ... Convenient for supporting material in processing long (Code No. 302987) material by a jointer.
- Whetstone (Code No. 949002) ... Convenient for removing burr after sharpening the blade.
- Hood Ass'y (Code No. 303891) ... Convenient for Dust Collector adapter.

 **WARNING :** Using attachments or accessories not recommended in this manual can be dangerous and could cause injury or mechanical damage.

APPLICATIONS

Wood working operations such as thickness planing and squaring in the construction of buildings or furnishings.

- Planer : thickness planing.
- Jointer : squaring and beveling.

PREPARATION BEFORE OPERATION

Prepare the following before operating the power tool :

1. Installation

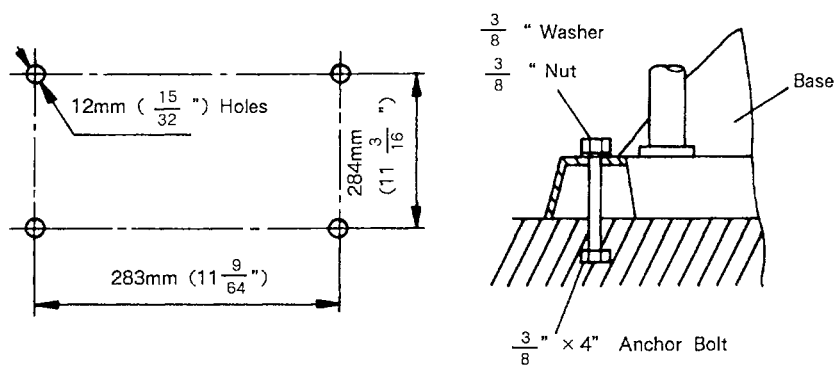


Fig. 3

To ensure stable operation, the machine should be installed on a flat surface and fixed with anchor bolts as shown in Fig .3.

2. Extension Cord


Ampere rating (on nameplate)	15Amp
Ext. Cord length	Wire gauge size mm ² (A.W.G)
7.5m (25ft.)	2.0mm ² (14A.W.G)
15m (50ft.)	3.5mm ² (12A.W.G)
22.5m (75ft.)	5.5mm ² (10A.W.G)

To use the power tool away from a power source, use an extension cord of suitable size to ensure safety, and to prevent power loss and overheating. Determine from the table on the left, the minimum wiresize required.

Check for loose or exposed wires and damaged insulation, before using cords.


Repair or replace as needed, before using the power tool.

NOTE : The lower the wire size number, the heavier the wire, and the further it will carry current without a voltage drop.


 **CAUTION :** Do not connect the unit to an electrical power source until the instructions are completely read and understood.

BEFORE USING

1. Make sure the power source is appropriate.

 **WARNING :** Check that the power tool is connected only to an AC power source whose voltage is as specified on the nameplate.
Never connect this power tool to a DC power source.

2. Make sure the power switch is turned OFF.

 **WARNING :** If the plug is connected to the power source with the power switch turned ON, the power tool will start suddenly, which could cause serious accidents.

3. Check the blades.

Check that the blades are free of cracks or damage.

4. Make sure the blades are fixed securely to the power tool.


Using the supplied box wrench, tighten the bolts to secure the blade.

For details, see Figs.15 and 20 in the section on " BLADE DISMOUNTING AND MOUNTING".

5. Check the safety cover.

The safety cover prevents the blade from touching your body (see Fig. 1-b).

Be sure to confirm that the cover moves smoothly as it covers the blade.

 **WARNING :** DO NOT OPERATE THE POWER TOOL if the safety cover does not function smoothly.

6. Check the Receptacle.

To prevent overheating or other accidents, check that the plug fits fully into the receptacle and does not fall out after it is inserted.

Contact a nearby electrical repair shop to repair or replace the receptacle if it is faulty.

7. Check that the cabtire cable is not damaged.

If the cabtire cable is damaged, have it either repaired or replaced.

AFTER CONNECTING THE PLUG TO AN APPROPRIATE AC POWER SOURCE,
CHECK AS BELOW :

8. Trial Run.

After starting the power tool, stay away from the power tool front to make sure no abnormalities exist ; then start the cutting operation.

PRACTICAL APPLICATIONS

OPERATING THE SWITCH

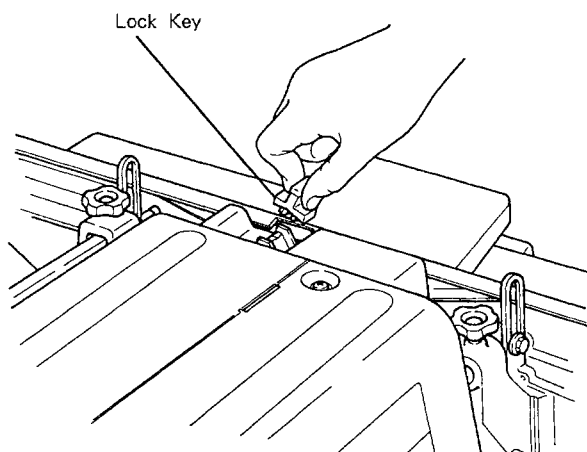


Fig. 4

The Lock Key can be removed regardless of switch position.

Please remove the Lock Key and keep it in a safe place when the machine is not in use. Also be sure the switch is turned off.

⚠ CAUTION :

Do not operate the ON/OFF switch while shavings and debris are in the unit.

Blow away the shavings and debris in the switch unit.

OPERATING THE PLANER

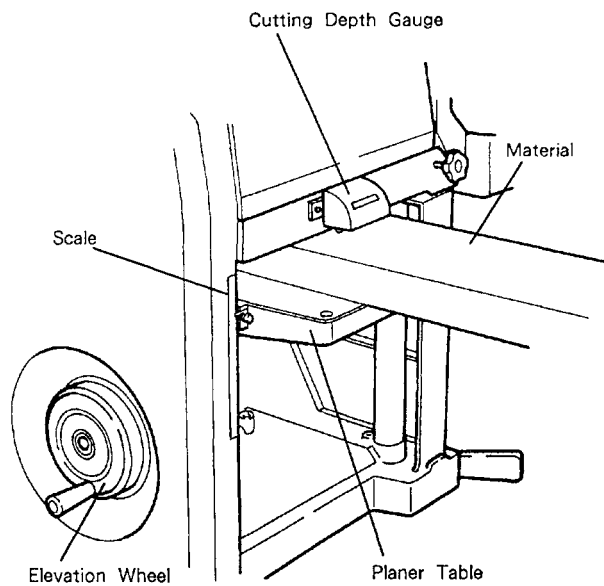


Fig. 5

Board Width	Cutting Depth
Less Than 150mm ($5\frac{7}{8}$ ")	2.5mm ($\frac{3}{32}$ ")
Less Than 180mm ($7\frac{3}{32}$ ")	1.5mm ($\frac{1}{16}$ ")
Less Than 312mm ($12\frac{9}{32}$ ")	1mm ($\frac{3}{64}$ ")

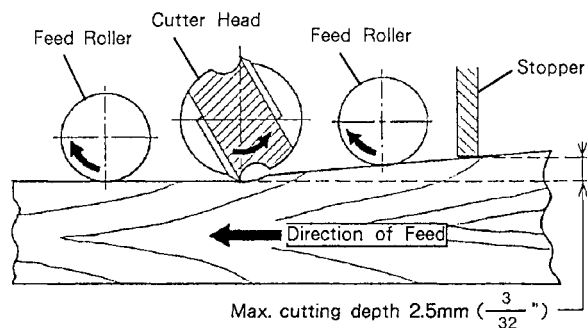


Fig. 6

Size of material to be cut W × H × L	Cutting Depth
312mm × 30mm × 1800mm ($12\frac{9}{32}$ " × $1\frac{3}{16}$ " × $70\frac{7}{8}$ ")	1.0mm ($\frac{3}{64}$ ")
120mm × 120mm × 1800mm ($4\frac{23}{32}$ " × $4\frac{23}{32}$ " × $70\frac{7}{8}$ ")	1.5mm ($\frac{1}{16}$ ")
120mm × 60mm × 3600mm ($4\frac{23}{32}$ " × $2\frac{23}{64}$ " × $141\frac{3}{4}$ ")	1.5mm ($\frac{1}{16}$ ")

1. Turn the Elevation Wheel to set the scale at the desired finish dimension (the scale indicates the thickness planing dimension); place the material on the Planer Table and feed it into the Planer (Fig. 5).

◦ When setting the cutting depth, it is convenient to refer to the Cutting Depth Gauge.

2. Place the material on the Planer Table and insert it into the machine to perform cutting.

3. Ensure that the material remains in close contact with the table throughout the planing operation.

4. Maximum cutting depth varies depending on board width.

Refer to the table on the left.

⚠ CAUTION :

Should an attempt be made to plane in excess of the maximum 2.5mm ($\frac{3}{32}$ ") cutting depth, the stopper (shown in Fig. 6) prevents the material from being fed in to the planer.

In such a case, set the cutting depth at 2.5mm ($\frac{3}{32}$ ") or less and plane the material in two or more operations.

This machine is capable of accommodating material up to 312mm ($12\frac{9}{32}$ ") wide and 160mm ($6\frac{5}{8}$ ") high. Refer to the size of material to be cut as is in the table on the left.

Especially, in the case of the material containing a large amount of water, use less cutting depth.

When cutting long material, difference in level and damage to the machine may result. Therefore, use the holes on the base and secure the machine on a thick piece of plywood (size: 3ft. x 5ft.) with the bolts, etc. for supporting the material upon feeding it.

WARNING :

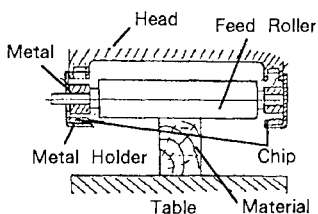
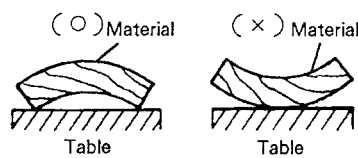
If the cutting depth is too large or for other reasons shavings are clogged inside the chip cover, never put fingers into the chip discharging port (inside the chip cover).

When removing shavings inside the cover, ensure the power switch is turned OFF and the plug is removed from the power receptacle.

5. When cutting two or more pieces of material placed next to each other, the thinner material may be rejected by the blade.

Separate the two pieces as far as possible.

6. Troubleshooting for unsmoothed feeding of material.

Item No.	Check point	Remedy
1	Adhesion of resin on the planer table surface.	Eliminate (clean) the resin on the planer table surface.
2	Adhesion of shavings on the feed roller.	Clean the shavings on the feed roller in the head section.
3	Clogging of shavings between the Metal and the Metal Holder of the Feed Roller. 	Clean the shavings by inserting a piece of wood between the feed roller and the planer table in the head section and pressing up the feed roller with handle.
4	Warp in the material 	Cut by facing the convex face upward first, and then the concave face upward.
5	Blunt blade	Re-sharpen the blade. If the blade is blunt, cutting resistance will increase, preventing smooth feeding of the material.

OPERATING THE JOINTER

- ⚠ CAUTION :**
- Be sure to attach the safety cover before use. Otherwise, the blade will be exposed while in rotation which may cause an injury.
 - Set the cutting depth to "0" before rotating the blade and confirm that the safety cover functions properly and smoothly by sliding a piece of material on the table surface.
 - It is dangerous to retract the material while cutting because the tip of the blade may reject the material. Never retract it.

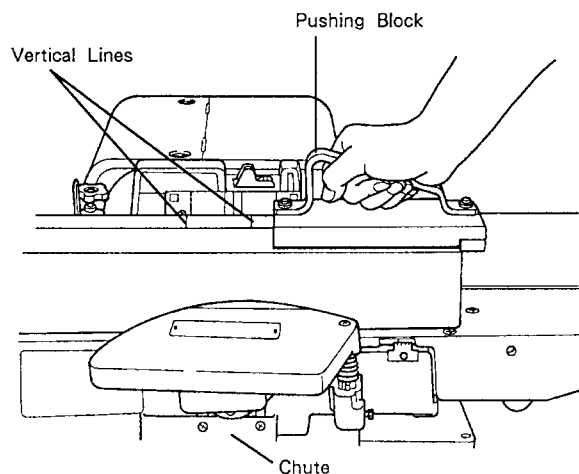


Fig. 7

- Use the standard accessory Pushing Block to feed thin or small material (Fig. 7).
 - Two Vertical Lines marked on the Guide (Rip Fence) indicate the limits of exposure of the blade.
- Never place your hand near this area.

- Do not store the shavings at the bottom part of the Chute. In cutting operation while shavings are stored, the chip-discharging port will be blocked, and it will cause a blocking with the shavings.
- When shavings are blocked inside of the chute, never put your fingers into the chip-discharging port (inside the chute). Be sure to switch off, and unplug the machine from the power supply (plug socket). Then, take out the jointer section, take out the chute, and remove the shavings.

1. Adjusting the Cutting Depth.

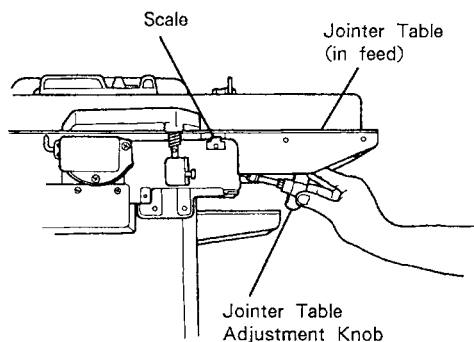


Fig. 8

Set the cutting depth by turning the Jointer Table Adjustment Knob while observing the Scale (Fig. 8). The Scale is graduated in 0.5mm (0.02") increments.

2. Squaring Operation.

- (1) Loosen the Adjustment Bolt, position the Jointer Table and the Guide to form a right angle with each other, and retighten the Adjustment Bolt (Fig. 9-a).
- (2) Loosen the knob, set the Guide to the proper location, and retighten the Knob (Fig. 9-b). Ensure that the Cover is pushed against the Guide (Fig. 10).
- (3) Feed the material while keeping it tightly pressed against the reference guide.

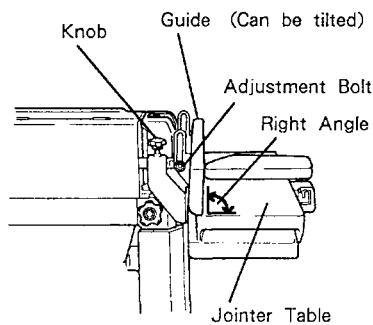


Fig. 9-a

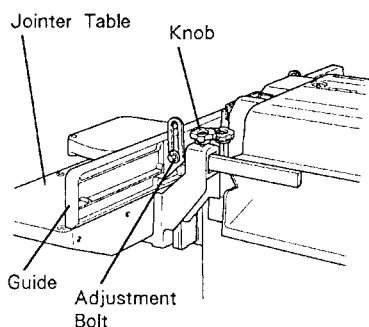


Fig. 9-b

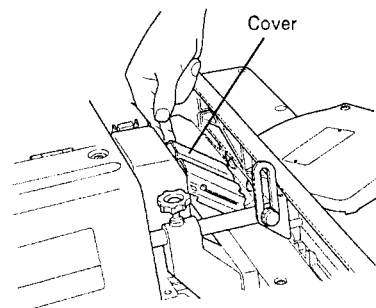


Fig. 10

3. Beveling Operation.

The Guide can be arbitrarily tilted within the range of 0~45°, and chamfering may be conducted within that range (Figs. 9-a and 11).

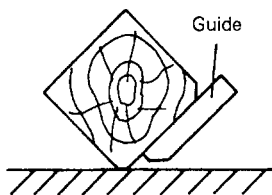


Fig. 11

⚠ CAUTION :

- Ensure that the Guide is firmly fixed prior to operating the machine.
- Whenever the Guide is moved, do not fail to cover the rear side of the planer blade.
- It is convenient to use the Extension Roller (optional accessory) when processing long material (over 1.5m in length).

Moreover as the body may fall down, use the holes on the base and secure the machine on a thick piece of plywood (size : 3ft.x 5ft.) with bolts, etc..

BLADE DISMOUNTING AND MOUNTING

⚠ WARNING : First, disconnect the plug from receptacle.

DISMOUNTING THE BLADES

1. For Jointer Operation.

NOTE : Please refer to Fig. 1-a and Fig. 1-b for location of major parts.

- (1) Loosen the Safety Cover clamping bolts and remove the Safety Cover.
- (2) Loosen the Knob (Fig. 9-a and Fig. 9-b) and remove the Guide.
- (3) Open the Nut Cover on the side of the Jointer Table, turn the Knob to bring the four bolts on the Jointer Blade Holder to the upper position, and engage the Jointer Cutter Head Clamp to secure the Cutter Head in position (Fig. 12).
- (4) Remove the two inner bolts with the provided Box Spanner (Fig. 12).
- (5) Loosen the two outer bolts by giving them about a 1/4 turn from a fully tightened position with the Box Spanner.

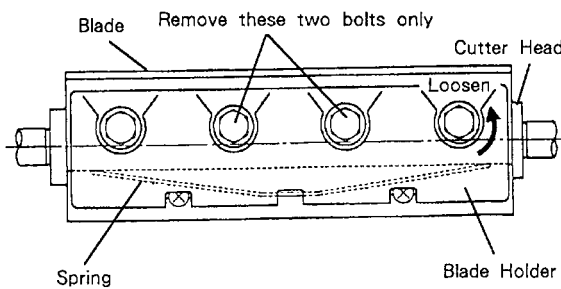


Fig. 12

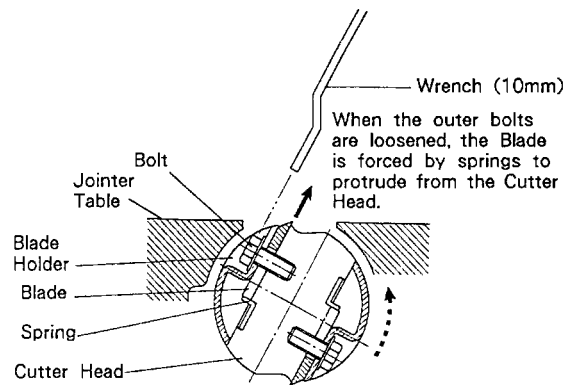


Fig. 13

⚠ CAUTION : When the bolts are loosened excessively, the inner springs force the Blade to protrude into the inner chamber of the Table (Fig. 13).

In such a case, be sure to turn the Cutter Head in the direction indicated by the arrow mark (clockwise) until the Blade is out of the Table ; then remove the Blade.

Should the Cutter Head be turned in direction opposite to the arrow mark, the Blade edge will bite into the Table, causing damage to both parts.

- (6) Release the Cutter Head with the lever on the Securing Device and turn the Knob on the side of the Jointer Table to bring the Blade to the upper position.
Then, loosen the remaining outer bolts with the provided 10mm wrench.
The blade will come out a few millimeters being pressed by the spring inside (Fig. 13).
- (7) When the Outer Bolts are sufficiently loosened, pull the Blade out by hand while carefully holding both sides of the Blade.

⚠ CAUTION : Do not completely remove the outer bolts unless absolutely necessary.

2. For Planer Operation.

NOTE : Please refer to Fig. 1-a and Fig. 1-b for location of major parts.

- (1) Remove the bolt on the side of the Chip Cover and turn the Chip Cover in the direction indicated by the arrow mark (see Fig. 14).
- (2) As in the case of the Jointer, open the Nut Cover (Fig. 1-b) on the side of the Jointer, turn the Knob to bring the bolts to the upper position, and engage the Securing Device on the planer side to secure the Cutter Head in position.
- (3) Loosen the six inner bolts from the eight bolts securing the Blade Holder with the provided Box Spanner (Fig. 15).

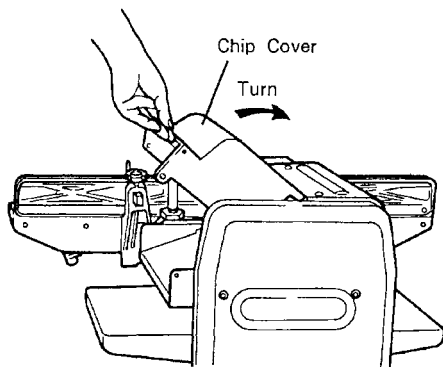


Fig. 14

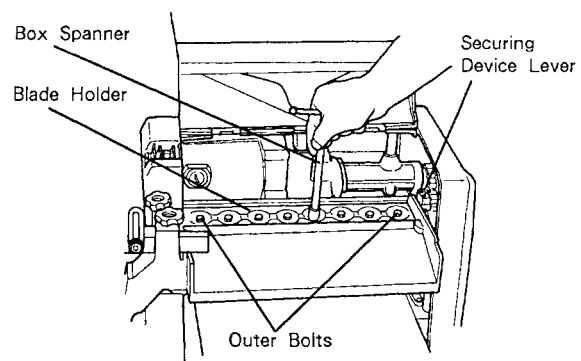


Fig. 15

- (4) Loosen the remaining two Outer Bolts by giving them about a 1/4 turn from a fully tightened position with the Box Spanner.

Subsequent procedures are the same as those for the Jointer.

MOUNTING THE BLADES AND HEIGHT ADJUSTMENT

1. For Planer Operation.

- (1) Turn the Knob on the side of the Jointer Table (Fig. 20) to bring the tip of the Back Blade on the Planer Cutter Head to the upper position, and engage the Planer Cutter Head Securing Device by pushing it inward and turning it clockwise to secure the Cutter Head in position (Fig. 16).
- (2) While carefully holding both sides of the Blade, insert it between the Blade Holder and the Back Blade ensuring that the notched grooves on the Blade are aligned with the Springs in the Blade Holder.

⚠ CAUTION : The gap between the Blade Holder and the Back Blade should be just enough for the Blade to be easily inserted.
If the gap is too wide, the Springs may become twisted and damaged.

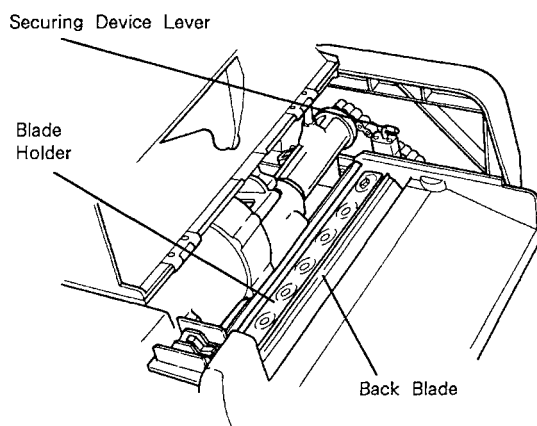


Fig. 16

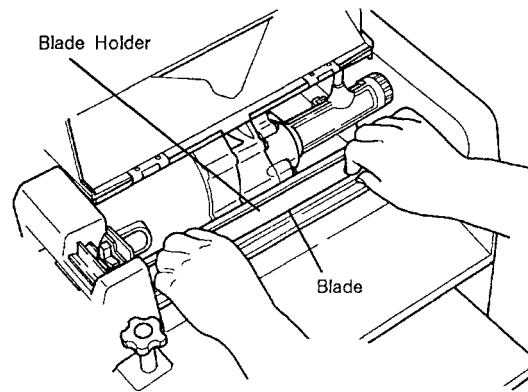


Fig. 17

- (3) After inserting the Blade, press the provided Setting Gauges to the Cutter Head surface as shown in Fig. 18. Then, ensuring that the Blade evenly contacts the Setting Gauges, use the provided Wrench to temporarily tighten the outer Bolts as shown in Fig. 18 and Fig. 19.

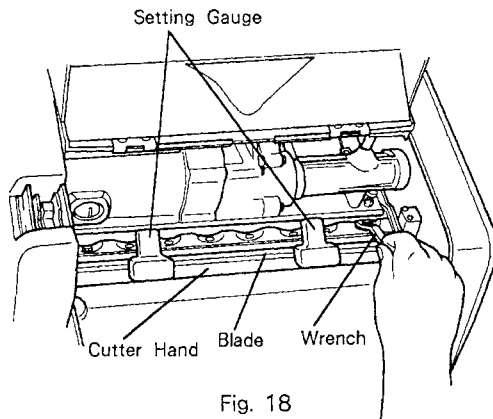


Fig. 18

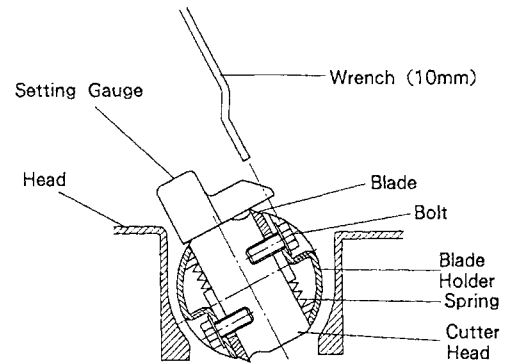


Fig. 19

- (4) After completing blade height adjustment as described above, release the Planer Cutter Head Securing Device by turning its lever counterclockwise, turn the Knob on the side of the Jointer Table to bring the eight bolts to the upper position, and re-engage the Planer Blade Securing Device.
- (5) Insert the four inner Bolts, and fully tighten all eight of the bolts with the Box Spanner. Finally, release the Planer Cutter Head Securing Device by turning its lever counterclockwise.

⚠ CAUTION : When tightening the Bolts after completion of adjustment, do not fully tighten each Bolt in a single operation.

The eight Bolts should be tightened in order two or three times while applying moderate force to the Box Spanner until they are evenly tightened; then they should be fully tightened.

To fully tighten each bolt in a single operation could result in movement of the adjusted Blade.

2. For Jointer Operation.

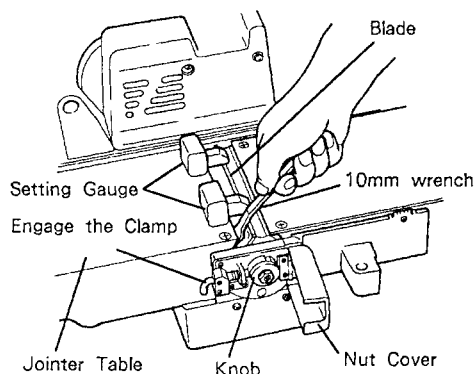


Fig. 20

- (1) Open the Nut Cover on the side of the Jointer Table, turn the Knob to bring the back Blade on the Jointer Cutter Head to the upper position, and engage the Jointer Cutter Head Clamp (Fig. 20).
- (2) While carefully holding both sides of the Blade, insert it between the Blade Holder and the back Blade ensuring that the notched grooves on the Blade are aligned with the Springs in the Blade Holder.

⚠ CAUTION : The gap between the Blade Holder and the back Blade should be just enough for the Blade to be easily inserted.


If the gap is too wide, the Springs may become twisted and damaged.

(3) After inserting the Blade, press the provided Setting Gauges to the surface of the Jointer Table as shown in Fig. 20.

Then, ensuring that the Blade evenly contacts the Setting Gauges, use the provided wrench to temporarily tighten the two outer bolts (Fig. 20).

(4) After completing Blade height adjustment as described above, release the Jointer Cutter Head Clamp by turning its lever to the left, turn the Knob on the side of the Jointer Table to bring the four bolts to the upper position, and re-engage the Jointer Cutter Head Clamp.

(5) Insert the two inner bolts, and fully tighten all four of the bolts with the Box Spanner. Finally, release the Jointer Cutter Head Clamp.

 **CAUTION :** On completion of Blade installation, ensure that the Guide and the Safety Cover are securely replaced.

In addition, close the Nut Cover (Fig. 20).

NOTE : Tightening sequence of the Blade Securing Bolt.

The Blade can be attached precisely if the bolts are tightened in the following procedure (Fig. 21).

- Temporarily tighten the Blade in the order of ① and ②.

For temporary tightening, it is enough to tighten so that the Blade may not protrude.

- Then, tighten in the order of ③ through ⑧ (from the center to both ends).

First, repeat tightening in the order of ③ to ⑧ by adjusting the tightening force and finally, tighten firmly.

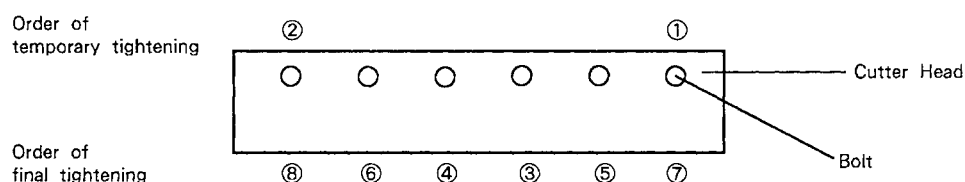



Fig. 21

REMOVING AND ATTACHING THE JOINTER

The Jointer Section can be easily attached to or removed from this machine as required.

When transporting the machine, it is easier for one person to carry it if the Jointer and the Planer are separated.

 **CAUTION :** Ensure the power switch is turned OFF and the plug is removed from the power receptacle.

1. Removing Jointer Section.

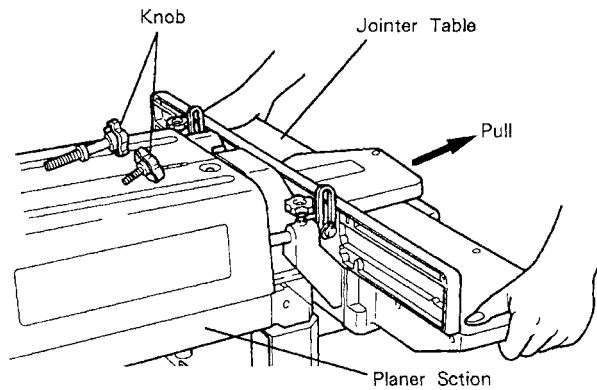


Fig. 22

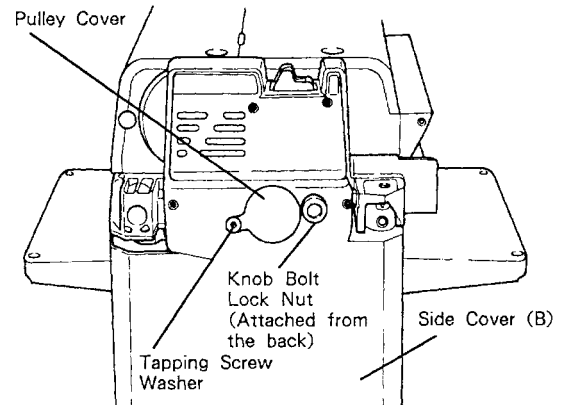


Fig. 23

Pull out the knobs (2 pieces) and then pull both ends of the Jointer Table in the direction indicated by the arrow mark while supporting it with your hands to remove the Table (Fig. 22).

⚠ CAUTION : When cutting on the Planer section without the Jointer Section, attach the provided Pulley Cover because the Pulley will be exposed on the side of the Side Cover (B) (Fig. 23).

2. Attaching Jointer Section.

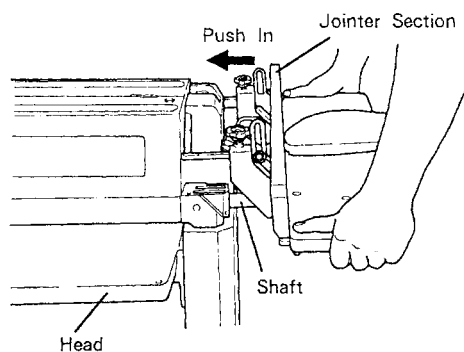


Fig. 24

- (1) Turn the Planer Pulley and match the red line provided on the Pulley with that on the Side Cover (B).
- (2) Match the line on the outer circumference of the Jointer Section with the red line on the upper part of the Jointer Table.
- (3) Match the holes of the Shaft and the Head and press in the direction indicated by the arrow mark.

The Jointer can be attached by tightening the knobs (2 pieces) (Fig. 24).

TRANSPORTATION

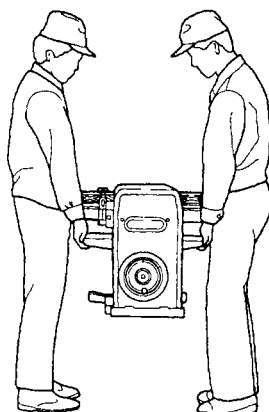


Fig. 25

When carrying this unit, hold both ends of the Planer Table and the Jointer Table for ease (Fig. 25).

SHARPENING THE BLADES

1. **Sharpening Frequency.** While sharpening frequency varies depending on the material, depth of cut, etc., the Blades should generally be sharpened after approximately 500m (1,600 board feet) of planing has been accomplished.
2. **Blade Sharpening allowance.** The Blades are provided with 7.5mm (0.295") sharpening allowance (Fig. 26).

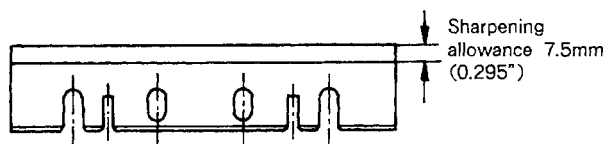


Fig. 26

Use of a Blade grinder by HITACHI (sold separately) is recommended.

MAINTENANCE AND INSPECTION

⚠ WARNING : Make sure the power switch is turned OFF and the plug is disconnected from the receptacle during maintenance and inspection.

1. Inspecting the Blades.

Use of a dull or damaged Blade reduces operation efficiency and could cause overload and serious damage to the machine motor.

Inspect the Blades regularly and sharpen or replace Blades as necessary.

⚠ CAUTION : If extremely blunt Planer Blades are used without replacing them, it is dangerous because the rejecting force at cutting increases.
NEVER USE BLUNT BLADES.

2. Handling.

The Planer Jointer is so designed that the Blades begin revolving immediately when the switch is turned ON.

Exercise particular care when the machine is in operation.

When the machine is not in use, ensure that the Lock Key is removed from the switch and the plug is removed from the power receptacle.

Keep the Planer Jointer stored in a dry environment.

3. Inspecting the carbon brushes.

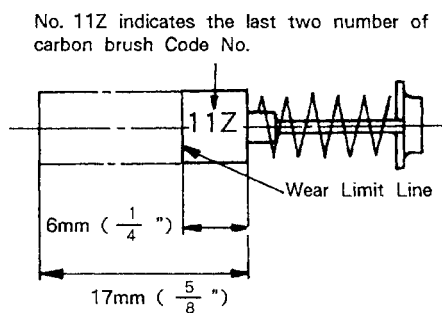


Fig. 27

The machine motor employs carbon brushes as expendable components.

Replace the brushes with new ones when they reach the Wear Limit Line as illustrated in Fig. 27.

Failure to replace a worn brush could result in serious damage to the motor.

In addition, keep the brushes clean so they can slide smoothly within the brush holder.

Replacing procedure for carbon brushes.

Disassemble each brush cap with a minus screwdriver. Each carbon brush can then be easily removed.

4. Inspecting the mounting screws.

Regularly inspect all mounting screws and ensure that they are properly tightened.

Should any of the screws be loose, retighten them immediately.

Failure to do so could result in a serious hazard.

! WARNING : If the bolts which secure the blade are lost or damaged, obtain those of the recommended parts.

If a commercially available bolt is used, the blade loses its balance, causing a bad effect on the machine body.

5. Remove planing shavings.

* Occasionally clean shavings from around the brush caps, remove the brushes and clean them thoroughly.

! WARNING : Exercise care to ensure that water and/or oil does not come in contact with the exposed motor.

* Clean the feed roller and tables.

* Clean the shavings outlet and around the back blade, especially after planing wet lumber.

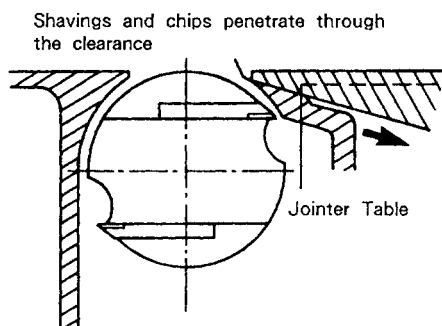


Fig. 28

* Turn the Jointer Table adjustment knob to lower the base to the maximum limit, and remove shavings and chips (Fig. 28).

6. Keep the Safety Cover clean and well lubricated to ensure its smooth, safe operation.

7. Lubrication. (See Fig. 1-a and Fig. 1-b for part name)

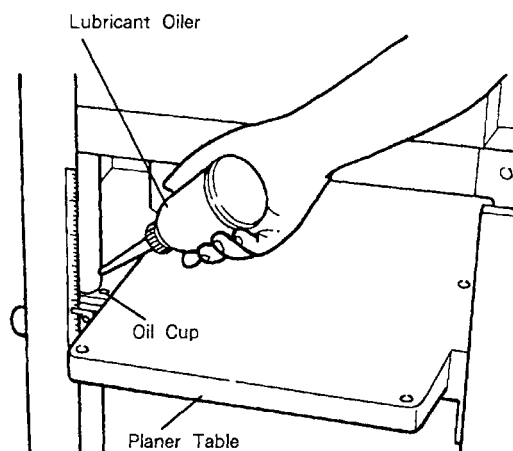


Fig. 29

(1) UP/DOWN sliding section of Planer Table (4 positions).

Sometimes, pour oil into the Oil Cups (4 positions) on the top face of the planer table.

(2) Dismount the chain about once a month, and take out the Side Cover (A), then, oil the loosened side.

Also, oil the feed screw or bearing parts of the Elevation Wheel.

SERVICE AND REPAIRS

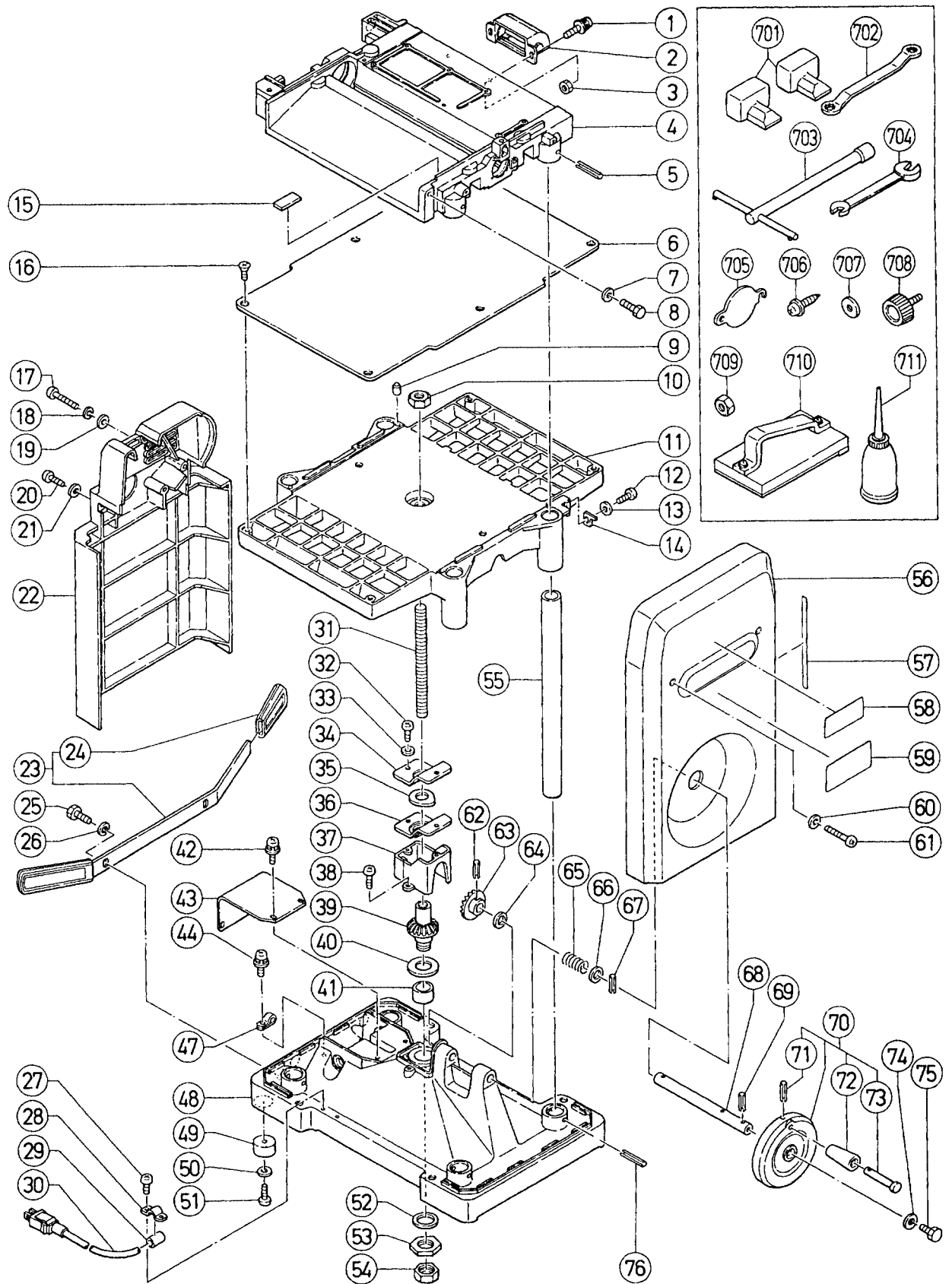
All quality power tools will eventually require servicing or replacement of parts because of wear from normal use.

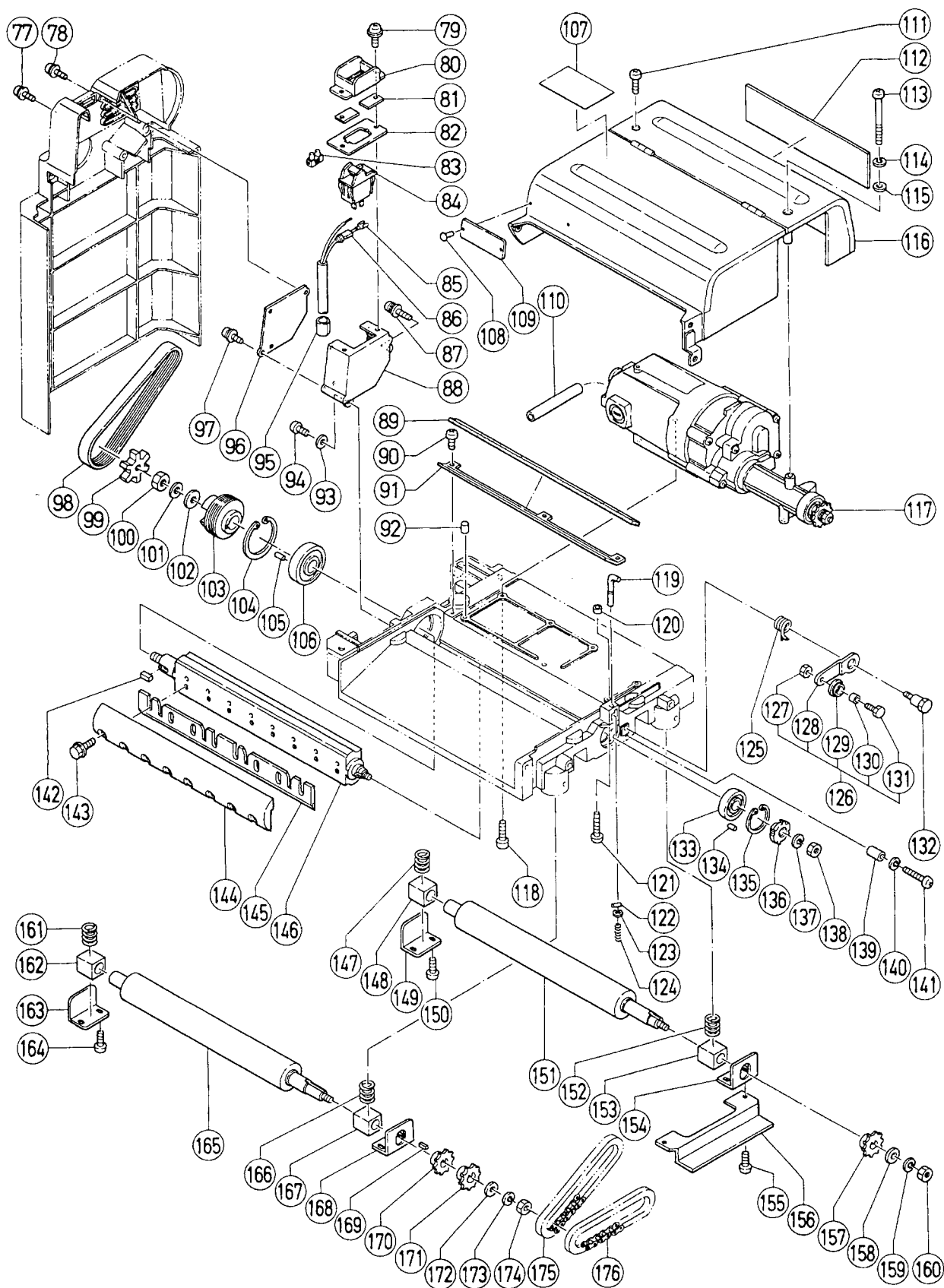
These operations must be performed ONLY by an AUTHORIZED HITACHI POWER TOOL REPAIR CENTER.

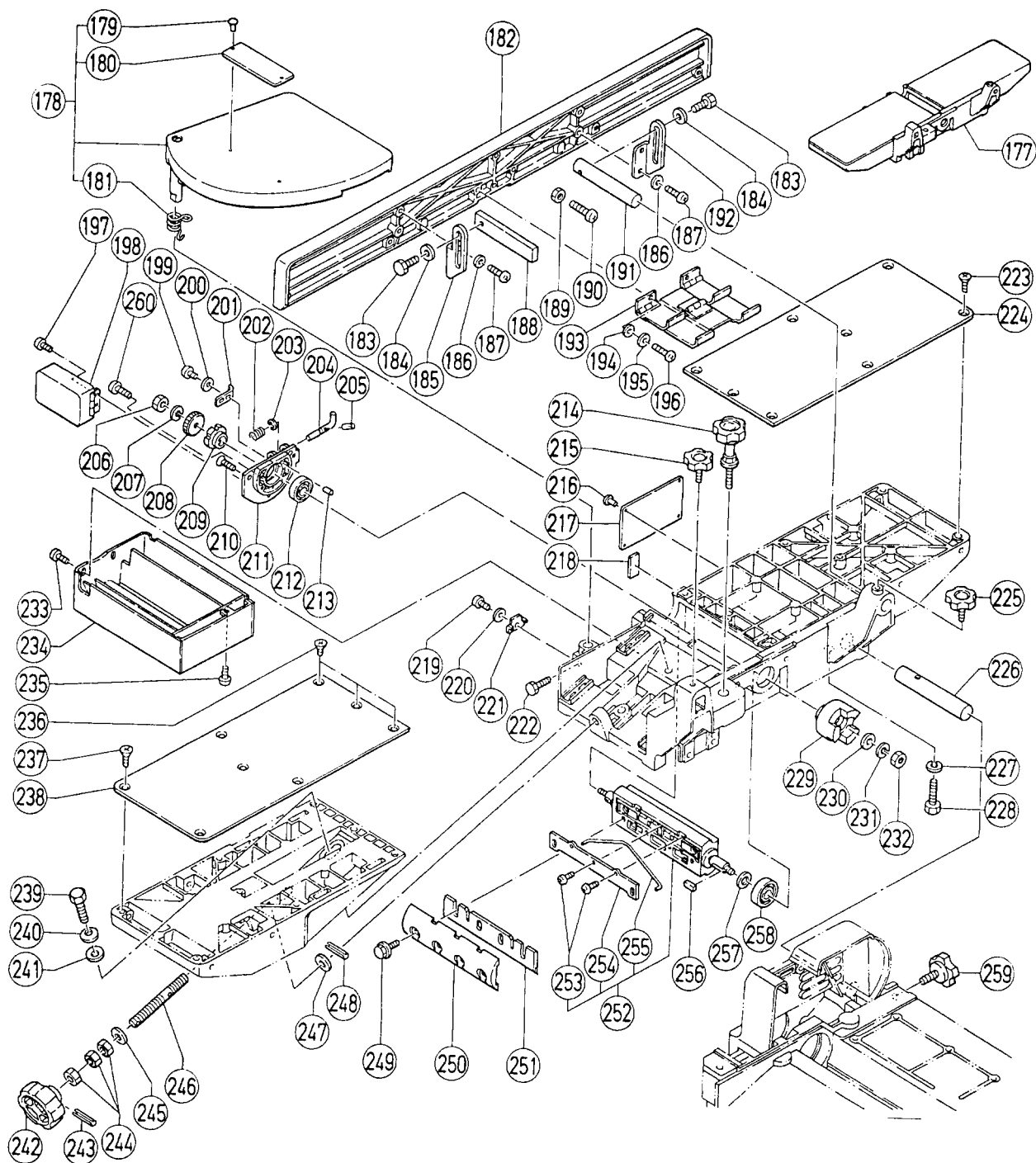
Note : Specifications are subject to change without any obligation on the part of Hitachi.

DETAILED PICTURE AND PARTS LIST

Model P12RA







Portable Planer Jointer Parts List.

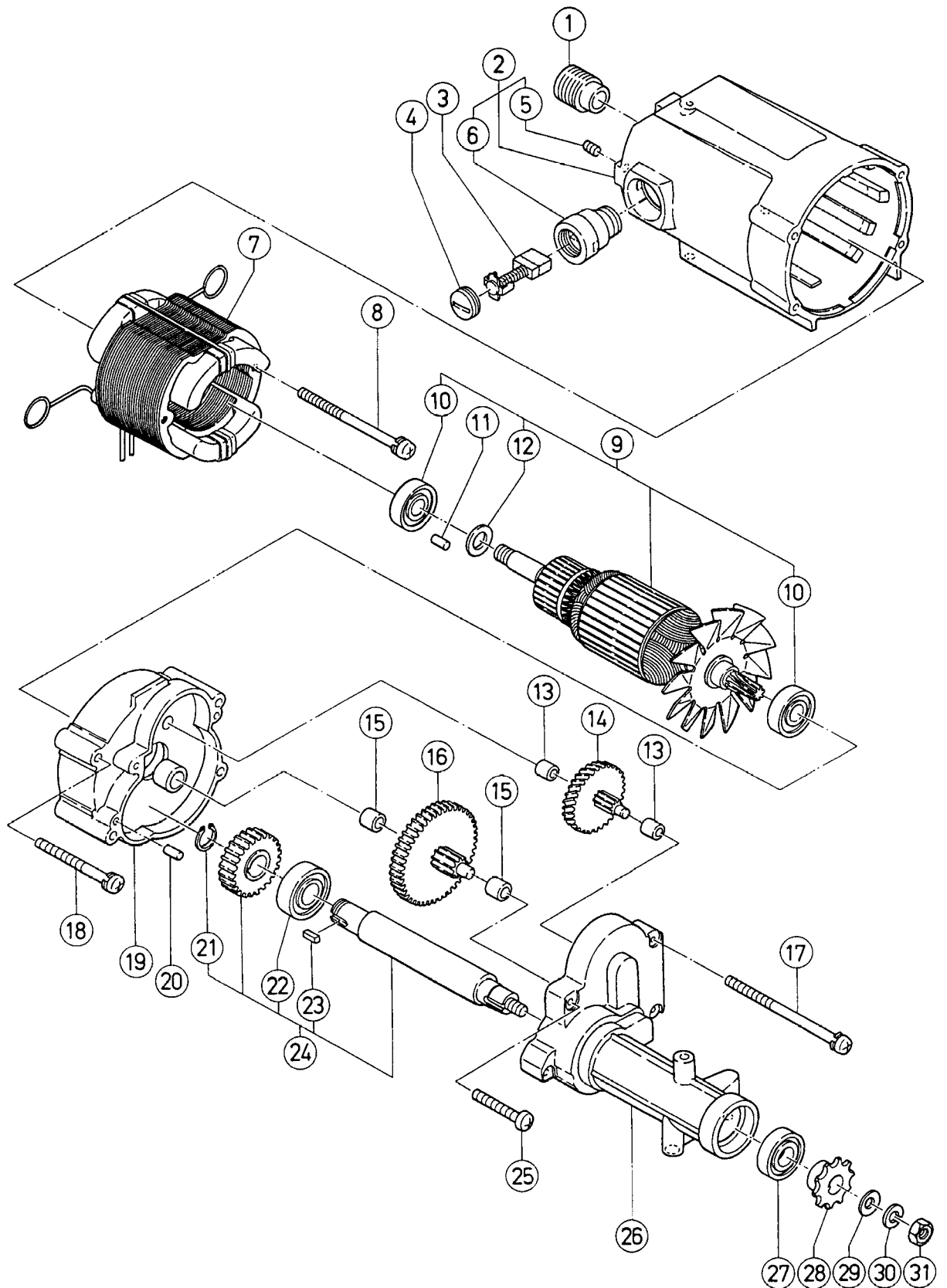
ITEM NO.	PART NAME	ITEM NO.	PART NAME
1	MACHINE SCREW (W/WASHERS) M6×20	63	BEVEL GEAR (B)
2	CUTTING DEPTH GAUGE	64	WASHER
3	NUT M6	65	SENSOR SPRING
4	HEAD	66	WASHER
5	ROLL PIN D6×40	67	ROLL PIN D4×25
6	PLATE	68	HANDLE SHAFT
7	BOLT WASHER M6	69	ROLL PIN D4×25
8	BOLT M6×14	70	WHEEL ASS'Y 120MM
9	OIL CUP	71	ROLL PIN D4×25
10	LOCK NUT M16	72	FEED GRIP (A)
11	PLANER TABLE ASS'Y	73	GRIP SHAFT
12	MACHINE SCREW M5×12	74	BOLT WASHER M6
13	BOLT WASHER M5	75	BOLT M6×12
14	INDICATOR	76	ROLL PIN D6×40
15	CAUTION LABEL (F)	77	TAPPING SCREW (W/WASHER) D4×25
16	FLAT HD. SCREW M5×10	78	TAPPING SCREW (W/WASHER) D4×16
17	MACHINE SCREW M5×40	79	TAPPING SCREW (W/WASHER) D4×16
18	SPRING WASHER M5	80	SWITCH GUARD
19	BOLT WASHER M5	81	VINYL COVER
20	MACHINE SCREW M5×30	82	SWITCH PLATE (A)
21	BOLT WASHER M5	83	PILLAR TERMINAL
22	SIDE COVER (B)	84	SWITCH
23	STEP (B) ASS'Y	85	FASTON (C)
24	GRIP	86	INSULATING SLEEVE
25	HIGH TENSION BOLT M8×16	87	MACHINE SCREW (W/WASHERS) M5×16
26	SPRING WASHER M8	88	SWITCH BOX
27	MACHINE SCREW M5×10	89	PACKING (A)
28	CORD CLIP	90	MACHINE SCREW M5×10
29	VINYL TUBE (A) (ID9.5×TO.7×20)	91	CHIP GUIDE
30	CORD	92	PIN D8×10
31	FEED SCREW	93	BOLT WASHER M5
32	MACHINE SCREW M5×8	94	MACHINE SCREW M5×12
33	SPRING WASHER M5	95	VINYL TUBE (A) (ID9.5×TO.7×20)
34	COVER (B)	96	SWITCH COVER
35	PACKING	97	TAPPING SCREW (W/WASHER) D4×20
36	COVER (A)	98	BELT
37	GEAR BOX	99	COUPLING RUBBER
38	MACHINE SCREW M5×10	100	NUT (LEFT HAND) M10
39	BEVEL GEAR (A)	101	BELLEVILLE SPRING M10
40	THRUST WASHER (A)	102	WASHER (I)
41	DU BUSH	103	PULLEY (B)
42	MACHINE SCREW (W/WASHERS) M5×12	104	RETAINING RING FOR D52 HOLE
43	TERMINAL COVER	105	BEARING LOCK
44	MACHINE SCREW (W/WASHERS) M5×16	106	BALL BEARING 6304VVCMAV2S
47	NYLON CLIP	107	CAUTION LABEL (B)
48	BASE ASS'Y	108	RIVET D2.5×4.8
49	BASE RUBBER	109	CAUTION PLATE (X)
50	BOLT WASHER M5	110	VINYL TUBE (ID8.5×TO.7×90)
51	MACHINE SCREW M5×20	111	TAPPING SCREW D5×16
52	THRUST WASHER (B)	112	DECORATION NAME PLATE
53	SPECIAL NUT (A)	113	MACHINE SCREW M5×55
54	SPECIAL NUT (B)	114	SPRING WASHER M5
55	COLUMN	115	BOLT WASHER M5
56	SIDE COVER (A)	116	CHIP COVER
57	SCALE (A)	117	MOTOR (MODEL P100RA-M)
58	CAUTION LABEL (A)	118	HEX. SOCKET HD. BOLT M6×20
59	NAME PLATE	119	LOCK PIN
60	BOLT WASHER M5	120	SPACER D6×8
61	MACHINE SCREW M5×30	121	BUTTON HEAD SOCKET SCREW M6×35
62	ROLL PIN D4×25	122	SLOTTED PIN D2×8

Portable Planer Jointer Parts List.

ITEM NO.	PART NAME	ITEM NO.	PART NAME
123	RETAINING RING(E-TYPE) FOR D4 SHAFT	183	HIGH TENSION BOLT M8×20
124	LOCK SPRING	184	BOLT WASHER M8
125	ARM SPRING	185	GUIDE ARM(B)
126	TENSIONER ASS'Y	186	BOLT WASHER M5
127	LOCK NUT M6	187	MACHINE SCREW M5×16
128	ARM	188	GUIDE SHAFT(B)
129	ARM PIECE	189	NUT M5
130	METAL(A)	190	MACHINE SCREW M5×25
131	SPECIAL BOLT M6×15	191	GUIDE SHAFT(A)
132	SPECIAL BOLT M8	192	GUIDE ARM(A)
133	BALL BEARING 6202VVCMP52S	193	SAFETY COVER(C)
134	BEARING LOCK	194	SPACER
135	RETAINING RING (C-TYPE) FOR D35 HOLE	195	BOLT WASHER M5
136	LOCK RING(A)	196	MACHINE SCREW M5×12
137	SPRING WASHER M8	197	MACHINE SCREW M4×10
138	LOCK NUT M8	198	NUT COVER
139	SPACER D4×10	199	MACHINE SCREW M4×6
140	SPRING WASHER M4	200	BOLT WASHER M4
141	MACHINE SCREW M4×20	201	STOP PIECE
142	FEATHER KEY 5×5×15	202	LOCK SPRING
143	BOLT	203	RETAINING RING (E-TYPE) FOR D4 SHAFT
144	BLADE HOLDER	204	LOCK PIN
145	PLANER BLADES(A) 317MM	205	SLOTTED PIN D2×8
146	CUTTER BLOCK(A) ASS'Y	206	NUT(LEFT HAND) M8
147	METAL SPRING(A)	207	SPRING WASHER M8
148	METAL	208	NUT(A)
149	METAL HOLDER(B)	209	LOCK RING(B)
150	MACHINE SCREW M5×16	210	FLAT HD. SCREW M5×12
151	FEED ROLLER(A)	211	BEARING HOLDER(B) ASS'Y
152	METAL SPRING(A)	212	BALL BEARING 6001VVCMP52L
153	METAL	213	BEARING LOCK
154	METAL HOLDER(A)	214	KNOB BOLT M8×75
155	MACHINE SCREW M5×16	215	KNOB BOLT M6×15
156	CHAIN COVER	216	RIVET D2.5×4.8
157	SPROCKET	217	CAUTION PLATE(T)
158	BOLT WASHER M8	218	CAUTION LABEL(F)
159	SPRING WASHER M8	219	MACHINE SCREW M4×6
160	LOCK NUT M8	220	BOLT WASHER M4
161	METAL SPRING(A)	221	SCALE(C)
162	METAL	222	BOLT M6×16
163	METAL HOLDER(B)	223	FLAT HD. SCREW M5×10
164	MACHINE SCREW M5×16	224	JOINTER PLATE(B)
165	FEED ROLLER(A)	225	KNOB BOLT M6×15
166	METAL SPRING(B)	226	SHAFT(B)
167	METAL	227	SPRING WASHER M8
168	METAL HOLDER(A)	228	BOLT M8×30
169	FEATHER KEY 4×4×12	229	COUPLING
170	SPROCKET(A)	230	BOLT WASHER M8
171	SPROCKET	231	SPRING WASHER M8
172	BOLT WASHER M8	232	LOCK NUT M8
173	SPRING WASHER M8	233	MACHINE SCREW M5×10
174	LOCK NUT M8	234	CHUTE
175	CHAIN(38 LINK)	235	MACHINE SCREW M4×10
176	CHAIN(34 LINK)	236	FLAT HD. SCREW M5×6
177	JOINTER TABLE ASS'Y	237	FLAT HD. SCREW M5×10
178	SAFETY COVER(A) ASS'Y	238	JOINTER PLATE
179	RIVET D2.5×4.8	239	BOLT M10×35
180	CAUTION PLATE(S)	240	BELLEVILLE SPRING M10
181	SPRING(B)	241	BOLT WASHER M10
182	GUIDE	242	KNOB

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Motor Ass'y



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